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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,105	01/25/2002	Jorg-Reinhardt Kropp	GR01P4989	1402

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EXAMINER

PAYNE, DAVID C

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 09/10/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/057,105	KROPP, JORG-REINHARDT	
	Examiner	Art Unit	
	David C. Payne	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 27 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 11 June 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received. _____
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 25 January 2002 have been fully considered but they are not persuasive.
2. Regarding the applicant's assertion that "*Epworth teaches away from the invention of the instant application.*" While Epworth does teach methods of handling pulse spreading, he does not **preclude** using a method as the applicant has claimed, i.e., said bits being distributed such that before a HIGH state output, a respective light transmitter is in a LOW state. Because a disclosure does not mention a method as claimed, it cannot be construed that the disclosure teaches against that which is claimed. Furthermore, the limitation as claimed is equivalent to a well-known modulation technique such as return-to-zero (RZ) modulation and therefore not patentable above the prior art.

Allowable Subject Matter

3. Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4, 7, 8, 10 –14, 16, 19, 22-25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epworth UK Patent Application GB 2 269 953 A (Epworth) in view of (Hayee) NRZ vs. RZ in 10-40 Gbit/s dispersion-managed WDM transmission systems, M.I. Hayee, A.E. Willner, Department of Electrical Engineering-Systems, USC, Los Angeles, CA; *Optical Fiber Communication Conference and Exhibit*, 1998. OFC '98., Technical Digest, 22-27 Feb. 1998
- Page(s): 407

Re claims 1, 8, 10, 11, 16, 19, 23, 24

Epworth disclosed an optical transmitter/method for generating a digital optical signal sequence, comprising:

a plurality of independently drivable light transmitters (*Fig. 3, #33*), said light transmitters generating respective optical signals for respective bits of a digital electrical signal sequence, said respective optical signals being combined and superposed into an optical signal path (*Fig. 3, #35*); and

a control device (*Fig. 3, #31*), distributing the bits between said light transmitters (*see page 2, lines 1 – 10*) Epworth does not disclose said bit being distributed such that before a HIGH state output, a respective light transmitter is in a LOW state. Hayee disclosed a return-to-zero modulation transmission over fiber. The LOW state/ HIGH state transition transmitter characteristic as claimed is equivalent to a RZ modulation format. It would have been obvious to one ordinary skill in the art at the time of invention to use RZ modulation with the Epworth system since RZ modulation is better than NRZ in combating self-phase modulation (SPM) in WDM systems as taught in Hayee (*see p.407 last column*).

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Re claim 4,

Epworth disclosed distributor "control device" distributes between said light transmitters a number of bits of the digital electrical signal sequence which corresponds to a number of said light transmitters, and said light transmitters simultaneously generate said respective optical signals (*see page 2, 2nd paragraph*).

Re claim 7, 22 Epworth does disclose staggering the bits in each optical path.

Re claim 12, Epworth disclosed a coupler (*Fig. 3, #34*) for coupler into a single waveguide.

Re claims 13 and 14, Epworth disclosed a four (even) number of transmitters (*Fig. 3, #33*).

Re claims 25 and 27, the applicant's claim of a length not greater than the length of the corresponding bit is circular in reasoning and self-apparent and therefore not patentable above the prior art.

6. Claims 2, 3, 5, 6, 17, 18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epworth UK Patent Application GB 2 269 953 A (Epworth) and (Hayee as noted above) as applied to claims 1 and 16 above, and further in view of Das et al. US 5,703,708 (Das).

Re claims 2, 3, 5, 6, 17, 18, 20, and 21

Epworth/Hayee does not disclose that the transmitters generate said respective optical signals in a temporally staggered manner. Das disclosed merging optical pulse streams which have been delayed (fixed temporally staggered) by 1 bit period for each optical delay line (*see Das, col./lines: 2/5-20*). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the delay components (*VL1, VL2, VL3*) respectively along the optical

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paths in Epworth to obtain the claimed invention. First, the structure of Das (*Fig. 2*) is very similar to the structure of Epworth (*Fig. 3*) in that the Das modulators (*MS1 – MS4*) function as the Epworth Drivers (#32). Second, whereas the Epworth bits partially overlay, it leads one of ordinary skill in the art to consider adding delay to each optical line to produce a succession of non-overlapping bits.

7. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epworth UK Patent Application GB 2 269 953 A (Epworth) and (Hayee as noted above) as applied to claim 1 above, and further in view of Frankel US 6,096,496 (Frankel).

Epworth/Hayee do not disclose light transmitters that are disposed a short distance apart on a semiconductor chip in the form of a VCSEL array. Frankel disclosed a VCSEL/ EEL array, which is inherently a configuration of closely space lasers (*see Frankel col./lines: 28/5-30*). It would have been obvious to one of ordinary skill in the art at the time of invention to fashion the Epworth lasers as did Frankel since the high density offered by such arrays allows greater integration and smaller packaging of systems.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from

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the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (703) 306-0004. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Dcp
August 27, 2003


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600